

REMARKS

Preliminary to examination and in response to the Office Action March 22, 2004, please amend claims 1-9 and 12-13 and cancel claims 10-11 and 14-15. Claims 1-9 and 12-13 are pending in this application.

In paragraph 4 on page 2 of the Office Action, claims 1, 3-14 and 39 were rejected under 35 U.S.C. § 103(a) over Takuji (Japanese Patent No.: JP 10-256621) in view of the Journal of Applied Physics article "Oxygen as a Surfactant in the Growth of Giant Magnetoresistive Spin Valves" by Egelhoff et al.

Applicant respectfully traverses the Section 103(a) rejection.

Applicant's invention requires "forming a copper seed layer in a NiMn top spin valve, oxidizing the copper seed layer in the NiMn top spin valve and depositing remaining layers of the NiMn top spin valve head including a NiMn pinning layer having a thickness of less than 200 Å.

Takuji, on the other hand, does not suggest oxidizing a copper seed layer or depositing remaining layers of the NiMn top spin valve head including a NiMn pinning layer having a thickness of less than 200 Å.

Egelhoff merely suggests oxidizing a spacer layer. However, Egelhoff fails to teach, disclose or suggest oxidizing a copper seed layer or depositing remaining layers of the NiMn top spin valve head including a NiMn pinning layer having a thickness of less than 200 Å.

Applicant's application identifies the problem of inter-diffusion of spin valve head layers due to heating a NiMn spin valve sensor to temperatures greater than 225°-240° C. for more than 2-3 hours (*see* page 5, lines 8-11); and addresses the problem by developing a

method for “precise control of magnetic coupling field in NiMn top spin valve heads and amplitude enhancement” using oxidized copper layers (page 7, lines 11-13).

Takuji does not recognize the problem of inter-diffusion of spin valve head layers due to heating NiMn spin valves. Takuji merely addresses a new construction of a spin valve type magnetoresistance effect material and includes NiMn as one of the available layers to be used in constructing spin valves.

Egelhoff clearly also fails to recognize the above-mentioned problem because Egelhoff does not even identify NiMn as a material used in fabricating spin valves, nor does Egelhoff recognize the problem with bulk and interfacial magnetostriction posed by the annealing process when a NiMn layer is used.

Dependent claims 2-9 and 12-13 are also patentable over the reference because they incorporate all of the limitations of the corresponding independent claim. Further, dependent claims 2-9 and 12-13 recite additional novel elements and limitations. Applicant reserves the right to argue independently the patentability of these additional novel aspects. Therefore, Applicant respectfully submits that dependent claims 2-9 and 12-13 are patentable over the cited patent.

On the basis of the above amendments and remarks, it is respectfully submitted that the claims are in immediate condition for allowance. Accordingly, reconsideration of this application and its allowance are requested.

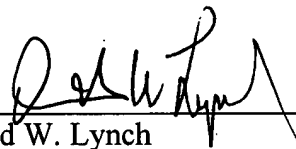
Application No. 10/038,125
Amendment Dated August 19, 2004
Reply to Office Action of March 22, 2004

If a telephone conference would be helpful in resolving any issues concerning this communication, please contact Attorney for Applicant, David W. Lynch, at 651-686-6633 Ext. 116.

Respectfully submitted,

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